

## **A Case Study on Role of Distance Education in Preventive to Curative Health & Nutrition Issues**

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### **ABSTRACT**

Delivering education and learning at distance is a way of reply to one of the important challenges for a country's population and health professionals scattered at different remote areas. Present case study was carried out at Allama Iqbal Open University Islamabad, Pakistan offering post graduate degree programme in community health and nutrition using distance learning approach. The objective of the study was to see how the distance education system was effectively utilized to address health, food & nutrition issues of the community?

Objectives of the programme, eligibility criteria, target groups enrolled, scheme of the study of the academic programme, methodology adapted for distance teaching in order to equip the students with latest knowledge related to course work, research work and field practice of knowledge imparted to the health professionals was studied. It was carefully reviewed why particular groups of health professionals from the remote areas of the country were interested in such post graduate health and nutrition programmes operated by distance mode of teaching. The procedure adapted by the academic department offering the degree programme to address the health and nutrition issues of the community such as malnutrition and various nutritional deficiency diseases by involving the enrolled health professionals was studied and it was tried to investigate how health graduates were trained in provision of preventive health care services to their respective communities? Their expected contribution to the community after successful completion of the programme was also assessed by reviewing the research projects completed by the health professionals in relation to the cure of disease.

It was concluded that distance learning could be successfully used as a tool to convey a quick and effective solution of common health issues of particular community from preventive to curative range by training the health professionals and their support staff.

### **INTRODUCTION**

There is a growing conviction among policy-makers that the availability of adequate numbers of well-trained and motivated human resources is a key determinant of health system's capacity to achieve their health, responsiveness and fairness-improving goals (Jones et al 2002). Distance education technology can provide an effective strategy to enhance the learning and skills of health & Nutrition professionals and extend educational opportunity mainly in the area of continuing education. Distance learning in relation to professional education refers to any educational experience in which instructor is separated from student by geographic distance. It is often argued that certain professional courses dealing with human subjects cannot be taught through distance as it requires lot of skill development and deals with sensitive issue of human element, but there is enough evidence of successful teaching of these courses through distance education mainly in relation to continuing education of health professionals world over. One of the major reasons for establishing distance education system is to provide more opportunities to the geographically isolated and reach the disadvantaged groups who otherwise do not have access to higher education due to various barriers. In such situation, distance learning institution can act as an agent for social change so as to realize the principle of expanded education. Distance learning system has the potential to address the issue of access and equity in relation to training of health & nutrition professionals and can provide them an opportunity of career promotion.

(Koul and Pity, 2003)

Evidence indicates that traditional college environments deprive a large group of people from the opportunity to enhance their professional skills. In order to accommodate this group, universities have established a wide range of alternative options such as evening courses, correspondence courses, cassette/videotape/CDs, learning packages and tele-courses. However, the needs of people already practicing in their fields are so unique that they are barely met, even by these educational methods. Strict work timetables, personal and professional duties or an inability to be absent from home or work can all represent major constraints for those wishing to improve their professional skills. Within this context, the World Wide Web, as a relatively low cost tool for the democratization and dissemination of knowledge, can play a revolutionary role by allowing students to conveniently follow distance courses from their homes. (Dirce et.al, 2001). Despite many limitations of the Web, it has shown to be a useful tool for distance education and should play an important role in the future of education. The increased potential of distance learning is a result of the technological breakthrough in communications, experienced during the last couple of decades. In fact, distance learning applications in health education have evolved together with communication technology (Hinman 1996)

The rapid evolution of technology during the last few decades has allowed a wider introduction of distance learning applications in health education, with increasingly complicated structure. Technological landmarks such as the telephone, the television, computer technology and Internet are precisely reflected in the evolution of distance learning, from correspondence courses to interactive video and virtual learning environments. Today, the course designer has a wide variety of media available for distance learning. However it becomes of critical importance to realize that sophisticated, high-tech media equipment does not always mean the best pedagogic solution (Anneroth and Burgland, 1994).

Distance learning is an apparent alternative to traditional methods in education of health care professionals. Non-interactive distance learning, interactive courses and virtual learning environments exist as three different generations in distance learning, each with unique methodologies, strengths and potential. Different methodologies have been recommended for distance learning, varying from a didactic approach to a problem-based learning procedure. Accreditation, teamwork and personal contact between the tutors and the students during a course provided by distance learning are recommended as motivating factors in order to enhance the effectiveness of the learning. Available information indicates that distance learning may significantly decrease the cost of academic health education at all levels. (Mattheos et.al 2001)

Health status of any country is measured by health indicators such as Infant Mortality Rate (IMR), Maternal Mortality Rate (MMR), Crude Death Rate (CDR), Birth Rate (BR), Life expectancy at birth and morbidity rate etc. Although, Pakistan has made a significant improvement in relation to health status by planning and implementing various health programmes since independence, yet the status in relation to certain sensitive indicators like MMR and IMR is a cause of concern.

## **METHODOLOGY**

One of the departments of Allama Iqbal Open University was chosen for this case study offering post graduate degree programme in community health & nutrition launched through distance mode of teaching specially designed to cater the needs associated with fields of health , nutrition & dietetics and also to train health professionals lacking in depth nutrition theory and research knowledge. The programme objectives , target groups, methodology of distance teaching for the course work , research work , special assignments , practical works examination and evaluation system was reviewed. The procedure of allocation of the research projects to the learners , the relevance of the research project with health & nutrition issues of the country and evaluation system using distance mode of teaching was reviewed. The role of supervisor in guiding the student for the conduct and completion of research under close supervision upto final submission

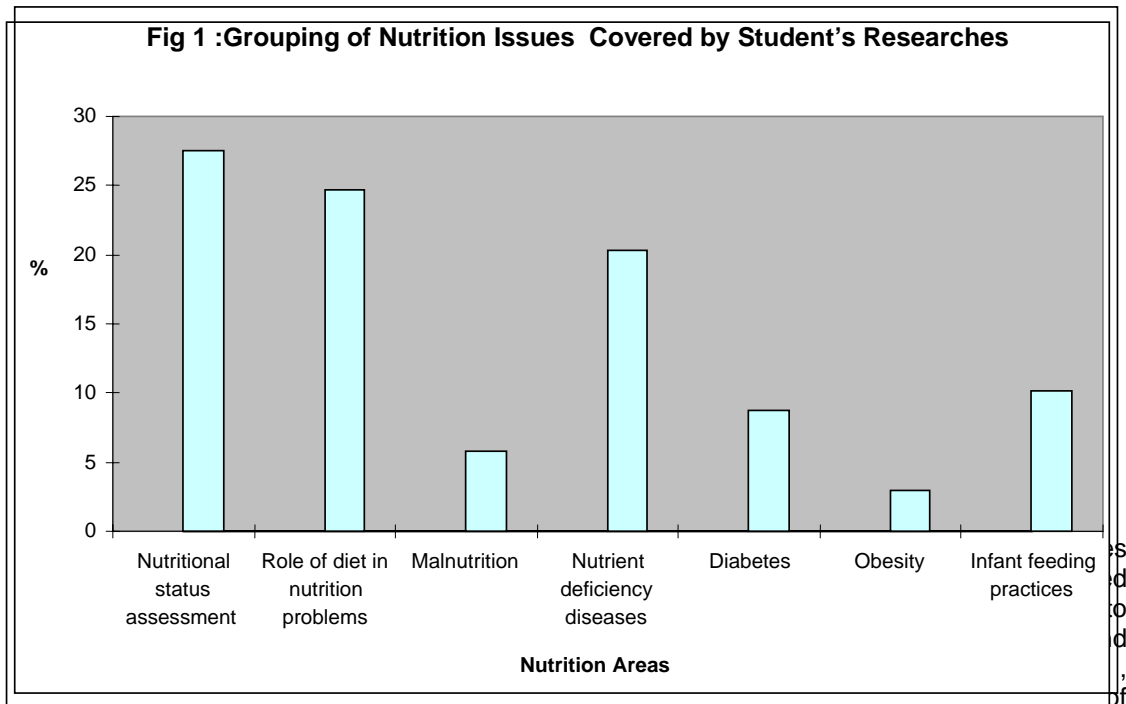
of thesis to the degree offering department was also investigated .Success of distance education was analyzed in relation to health and nutrition issues of the country.

Structure of the programme was studied with a view point to understand the contribution of distance education system in successful completion of the degree programme by the enrolled learners. The nature of research projects completed by the students enrolled in a semester were reviewed and the research projects were grouped into broader nutrition related categories in order to determine the major problem areas addressed .It was investigated what major types of health & nutrition problems prevailed among the general population of the country and what was the contribution of such health professionals who were trained in nutrition field towards solving these nutrition related problems ? Information from various surveys carried out at national level such as national nutrition surveys , economic surveys and information from other allied agencies working on health & nutrition aspects of community was gathered to explore the actual nutrition related problem areas of the community. Nature of research projects grouped into broader nutrition related categories successfully completed by the students as a requirement for masters degree were quantified into percentages and correlated with available figures of health & nutrition issues being highlighted in the relevant national surveys carried out by the state.

## **RESULTS & DISCUSSION**

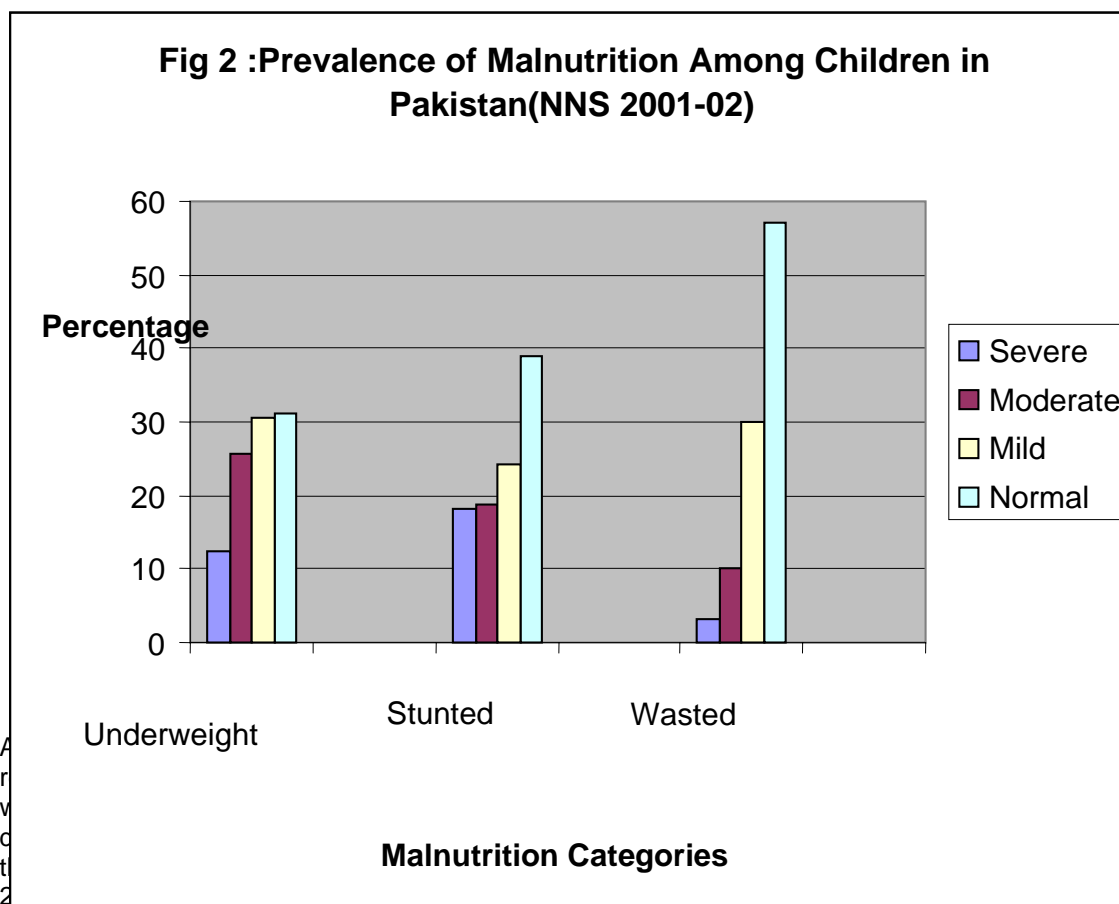
The review of the programme highlighted that postgraduate degree level programme in Community Health & Nutrition was launched with major objective to promote the professions of health , food & nutrition and dietetics by providing opportunities to these professionals to continue their education taking benefit of distance mode of education spending most of the times at their work places. Target groups of the programme were mainly the health , food and nutrition professionals with at least three years of professional experience in their related disciplines. It was evident from the structure of the programme that 30 % weightage was given to the continuous assessment during the semester in terms of assignments , practicals and field research surveys whereas 70 % weightage was given to the final examination. The course work was appropriately supported with mini research projects / practicals depending upon the course requirements and was offered in first three semesters whereas on complete semester was allocated for research work to be carried out individually by each learner in close consultation of approved supervisor .The student remained at a distance from the department with few hours of face to face guidance at the campus during the workshops. The course work covered all the theoretical knowledge related to the discipline taught in first three semesters whereas research was the part of fourth semester. The major part of the education was transferred to the student through the designated local regional offices of the University scattered at remote corners of the country catering the needs of both urban and rural students. The students were however required to attend the compulsory courses workshop at the headquarter of the University for short duration of two to three weeks before the final examinations.

Upon successful completion of the course work , the learners from various distant areas were required to show their preferences regarding the areas of research along with the possible supervisor's preference to carry out the research project as a requirement for completion of masters degree by remaining at their home stations. The supervisors were bound to rate the researchers performance during the period of research. Feed back was also taken from the students in order to rate the academic performance of the faculty during the workshops. The review of the record indicated that majority of the theses completed during period of one year (27.54 %) were on the topics related to the nutritional status assessment of children , adults , pregnant women and other diseased study subjects whereas 24.63 % of theses were based on investigating the role of diet in relation to nutritionally associated problems of various age groups. 5.80% of the theses were on the topics directly relating to varying forms of malnutrition. Studies completed on nutrient deficiency diseases were 20.3 % . Few of other theses covered diabetes (8.69 %) whereas the percentages of theses written on obesity and infant feeding / weaning practices were 2.9 % and 10.14 % respectively (Fig 1)



malnutrition among Pakistani women and children remained high. In spite of sustained food supply, Pakistan remained one of the few Asian countries that have shown little evidence of improvement over the last two decades. This has also been documented in the past twenty years by three national surveys with a major focus on nutrition. These surveys revealed that about 18.86 million children were under five, of which 42 percent were found to be underweight, representing an alarming condition of food insecurity. Beyond immediate causes, economic and social factors were the underlying and critically important determinants of malnutrition. It was recognized that the extent of poverty in the country closely coincided with nutrition indicators.

The malnutrition levels measured among children under five years of age by underweight, stunting and wasting are presented in Fig 2. A severe type of stunted prevalence of 18.1 percent was alarmingly high as was level of severity of the wasted category of malnourished children which was 3.1 percent. (NNS 2001-02)



key health indicators still lag behind in relation to other regional countries. (See Table1)

Table 1 Social Indicators					
Country	Life Expectancy Year 2004*		Infant Mortality Rate per 1000** Year 2004	Mortality Rate under 5 per 1000 Year 2004**	Population Avg. Annual (%) Growth Year 2004**
	M	F			

Pakistan	63.2	63.6	70^	101	1.8*
India	62.1	65.3	62	85	1.5
Sri Lanka	71.7	77.0	12	14	1.3
Bangladesh	62.5	64.2	56	77	1.7
Nepal	61.6	62.4	59	76	2.2
China	70.2	73.7	26	31	0.7
Thailand	66.7	74.0	18	21	0.7
Philippines	68.6	72.8	26	34	2.0
Malaysia	71.1	75.8	10	12	2.0
Indonesia	65.3	69.2	30	38	1.3

^Pakistan Social and Living Standard Measurement Survey (PSLM) 2005-06

\*Population growth for Pakistan is estimated at 1.8 percent (National Institute of Population Studies).

\*\* Source: Human Development Report 2006

Communicable diseases remained the most important health problem in Pakistan. The common causes of death and illness in the country were acute respiratory tract infections, diarrhoeal diseases, malaria, tuberculosis, and vaccine preventable infections. Epidemic-prone diseases such as meningococcal meningitis, cholera, hepatitis and viral hemorrhagic fevers were also prominent health threats in the country.

Micronutrient deficiency in Pakistan was common and reflected a combination of dietary deficiency, poor maternal health and nutrition, high burden of morbidity and low micronutrient content of the soil especially for iodine and Zinc. However, the food availability in the country has been sufficient to meet the overall national requirements across regions. Availability of major food items during the fiscal year 2006- 07 depicts an increase in supply over the previous year. In terms of nutritional intake average caloric availability per day is likely to increase from 2423 to 2425 by the end of fiscal year 2006-07. Details of the food availability are given in Table 2. (Pakistan Economic Survey, 2006-07)

Table 2 Food Availability Per Capita

Items	Year/Unit	49-50	79-80	89-90	99-00	02-03	03-04	04-05	05-06 (E)	06-07 (T)
Cereals	Kg.	139.3	147.1	160.7	165.0	147.3	150.7	142.0	155.2	153.5
Pulses	Kg.	13.9	6.3	5.4	7.2	6.0	6.1	6.8	7.6	6.6
Sugar	Kg.	17.1	28.7	27.0	26.4	31.5	33.6	27.0	29.8	30.0
Milk	Ltr.	107.0	94.8	107.6	148.8	153.4	154.0	155.7	162.6	170.1
Meat	Kg.	9.8	13.7	17.3	18.76	19.2	18.8	19.6	19.1	20.0
Eggs	Dozen	0.2	1.2	2.1	5.1	4.5	4.6	4.7	4.6	4.8
Edible Oil	Ltr.	2.3	6.3	10.3	11.1	10.8	11.3	12.4	12.0	11.9

Caloric & Protein Availability (Per Capita)

Calories (Number)	Per day	2078	2307	2324	2416	2333	2381	2271	2423	2425
Protein (Gms)	Per day	62.8	61.5	67.4	67.5	66.4	67.8	65.5	69.6	69.5

E –Estimates

T-Targets

Pakistan's demographic profile for vision 2030 also focused on a healthy Pakistan, with lesser malnutrition and a changing food intake profile. The core of social development policy and poverty reduction strategy must lie in the recognition of the state's responsibility to ensure that basic needs of its citizen are met. These are seen in terms of indicators such as rates of morbidity and mortality, specially infant and maternal mortality rates, illiteracy and malnutrition (Planning Commission, 2007)

## CONCLUSION

The study concludes that distance education could play a vital role in successfully addressing health & nutrition issues of the community both of preventive and curative nature by involving the health professionals in practical research associated with the needs of the country of which they probably had a rare experience in the medical education that merely focuses on medicine part ignoring in depth nutrition theory and research knowledge.

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